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A feasibility study of Acceptance and Commitment Therapy for emotional dysfunction following psychosis

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Abstract

The experience of psychosis can lead to depression, anxiety and fear. Acceptance and Commitment Therapy (ACT) facilitates individuals to accept difficult mental experiences and behave in ways that are consistent with personally held values. This study was a single (rater) blind pilot randomised controlled trial of ACT for emotional dysfunction following psychosis. Twenty-seven participants with psychosis were randomised to either: ten sessions of ACT plus treatment as usual (TAU) or TAU alone. The Hospital Anxiety and Depression Scale, Positive and Negative Syndrome Scale, Acceptance and Action Questionnaire, Kentucky Inventory of Mindfulness Skills and Working Alliance Inventory were used. Individuals were assessed at baseline and 3 months post-baseline. The individuals randomised to receive ACT found the intervention acceptable. A significantly greater proportion of the ACT group changed from being depressed at time of entry into the study to not being depressed at follow-up. The ACT group showed a significantly greater increase in mindfulness skills and reduction in negative symptoms. Results indicated that individuals randomised to ACT had significantly fewer crisis contacts over the study. Changes in mindfulness skills correlated positively with changes in depression. ACT appears to offer promise in reducing negative symptoms, depression and crisis contacts in psychosis.

Key-words: Psychosis, Acceptance, Mindfulness, Depression, Therapy.

Introduction

The experience of psychosis has been shown to be associated with increased levels of depression (Rooke and Birchwood, 1998; Birchwood et al., 2000), hopelessness (White et al., 2007), social anxiety (Cosoff & Hafner, 1998; Gumley et al., 2003) and traumatic reactions sufficient to qualify for PTSD (Shaw et al., 2002; White & Gumley, 2009). Randomised clinical trials have found that Cognitive Behaviour Therapy for psychosis (CBTp) is efficacious for treating residual distressing positive and negative symptoms (Wykes et al., 2008). However, the evidence for treating emotional dysfunction (such as anxiety, depression and hopelessness) is less clear (Birchwood, 2003). Although, Wykes et al. (2008) found a moderately strong effect size of CBTp on mood, when studies with 'poor' methodological quality were controlled for, the weighted effect size on mood in the adequate quality studies was not significant.

In recent years there has been a move toward incorporating acceptance-based approaches into cognitive-behavioural frameworks to help alleviate distress associated with psychological disorders (e.g. Segal et al., 2002; Rapgay & Bystrisky, 2009). Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) is one such psychological therapy. ACT is derived from Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001); a behavioral theory concerned with the nature of language and cognition. ACT conceptualises psychological suffering as being largely caused by cognitive entanglement, experiential avoidance, and the resulting psychological rigidity that impedes people's ability to take behavioral steps that are consistent with the individual's core values (Hayes & Smith, 2005). Rather than altering the content or frequency of cognitions, ACT seeks to alter the individual's *psychological relationship* with thoughts, feelings and sensations to promote greater psychological flexibility. Pull (2008), summarising the findings from previous reviews, concluded that ACT has evidenced effectiveness for treating a range of psychological disorders, but there is a need for more well controlled studies to be conducted.

Two previous randomised controlled trials have investigated ACT for psychosis (Bach & Hayes, 2002; Gaudiano & Herbert, 2006). Both were non-blind trials that focused on inpatients with psychotic disorders. Bach and Hayes (2002) found that individuals receiving ACT demonstrated significantly lower belief in positive symptoms at follow-up compared to the treatment as usual only group (TAU). The re-hospitalization rate in the ACT group was only half that of the TAU only group. Similarly, Gaudiano & Herbert (2006) found that significant decreases in beliefs about hallucinations during treatment were only observed in

the ACT condition. These changes in positive symptom conviction were strongly associated with changes in levels of distress.

As yet, no blind randomised controlled trials of ACT for psychosis have been conducted. Furthermore, no research has been conducted to determine whether ACT is effective for addressing emotional dysfunction (e.g. depression and anxiety) that can follow an acute episode of psychosis. In light of these issues, we set about determining the feasibility of conducting a blind randomised controlled trial of ACT for emotional dysfunction following psychosis. The PICO framework (Oxman et al., 1993; Richardson et al., 1995) was used to specify the parameters of the study aims and objectives:

- Population: Could appropriate individuals be identified and recruited to a trial of ACT for emotional dysfunction following psychosis?
- Intervention: Would ACT be an acceptable intervention for individuals diagnosed with a psychotic disorder? Would they rate the extent to which they were able to identify goals for therapy, work towards tasks and form a therapeutic bond with the therapist be rated favourably?
- Comparison: Could an appropriate group of participants be recruited to facilitate comparison with the ACT intervention.
- Outcomes: What measures would be important for assessing the impact of ACT on emotional dysfunction following psychosis?

Method

Design

PACT was a 12-month **P**rospective **R**andomised **O**pen **B**lind **E**valuation (PROBE) clinical trial exploring the feasibility of using Acceptance and Commitment Therapy to facilitate emotional recovery following psychosis.

Participants

Participants were consecutively recruited, assessed and randomised from mental health services across NHS Greater Glasgow and Clyde including community mental health teams, early intervention services for psychosis, a medium-secure forensic service, and psychiatric rehabilitation services. Participants all met ICD-10 (WHO, 1992) criteria for a psychotic disorder determined by a diagnosis of a psychotic disorder (i.e., schizophrenia,

schizoaffective disorder, schizophreniform disorder, delusional disorder, brief psychotic disorder, psychotic disorder NOS), bipolar disorder (with psychotic features), or depressive disorder with psychotic symptoms. Diagnoses were determined by case-file review. Participants were excluded if there was a (1) diagnosis of learning disability; (2) inability to participate in psychotherapy/research due to acute medical condition or acute psychosis (as defined by a score ≥ 5 on an item of the PANSS Positive Syndrome subscale); (3) psychotic symptoms due to a general medical condition (4) systematic psychological therapy being delivered at the point of referral.

Measures

General Outcome Measures:

The *Hospital Anxiety and Depression Scale* (HADS; Zigmond & Snaith, 1983) is a widely used self-report instrument designed as a brief assessment tool of the distinct dimensions of anxiety and depression in non-psychiatric populations. Bjelland et al., (2002) noted that the psychometric properties of the HADS are such that it can be used with confidence clinically. This measure was completed with participants at baseline and at 3 month post-baseline.

The *Positive and Negative Syndrome Scale* (PANSS; Kay et al., 1987): The PANSS is a 30-item observer rated scale used to assess the presence and severity of positive (e.g. delusions, hallucinatory behaviour) and negative (e.g. blunted affect, emotional with-drawl) symptoms. Derived scores include 'positive' and 'negative' syndrome scores. Psychometric studies have reported good inter-rater reliability and satisfactory internal consistency, construct validity and concurrent validity in relation to other measures of psychopathology (Kay et al., 1988; Kay et al., 1989). This measure was completed with participants at baseline and at 3 month post-baseline.

Therapy specific measures

Acceptance and Action Questionnaire – II (AAQ-II; Bond, Hayes, Baer, Carpenter et al., 2011): developed specifically for assessing ACT outcomes it measures acceptance and experiential avoidance. The total score provides an indication of psychological flexibility. Consequently, lower scores on the AAQ-II are indicative of higher levels of experiential avoidance.

Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith & Allen, 2004): is a self-report inventory for the assessment of mindfulness skills. It assesses four mindfulness skills: observing, describing, acting with awareness, and accepting without judgment. Analyses have shown that the KIMS has good internal consistency and test-retest reliability.

Therapeutic Alliance Measure

The Working Alliance Inventory (Short Form Revised; WAI–SR; Hatcher & Gillaspy, 2006) is a 12-item self-report measure of therapeutic alliance. It assesses 3 aspects of the therapeutic alliance: (a) agreement between client and therapist on the goals of therapy, (b) agreement between client and therapist on the tasks of therapy, and (c) the quality of the interpersonal bond between client and therapist. Hatcher and Gillaspy (2006) reported that the internal consistency coefficient alphas and convergent validity were sufficiently high.

Arms of the study

Treatment as usual (TAU) only: In the current study, TAU consisted of psychopharmacology, case management, and/or psychotherapy. This included review with the Consultant Psychiatrist and contact with a designated key-worker (i.e. a Community Psychiatric Nurse or Occupational Therapist). In some cases, TAU also included contact with a Social Worker and/or Clinical Psychologist.

Acceptance and Commitment Therapy + TAU (which, to avoid confusion with the other condition, is simply labelled *ACT* throughout the rest of this article): The ACT intervention was delivered by RGW for up to 10-sessions in a one-to-one format. The ACT protocol was developed specifically for the trial and was based on the work of Polk et al., (2009). The ACT sessions incorporated work focusing on the following themes: (1) Distinguishing between different types of experience: internal experience vs. 5-sense experience; (2) Recognising how we get caught up struggling to move away from suffering; (3) Moving towards our values (4) Getting distance between us and our 'life stories', (5) Exploring how trying to control difficult mental experiences can be part of the problem rather than the solution, (6) Noticing that we can notice: focusing on the context in which mental experiences occur rather on the content of these experiences, (7) Exploring worry thoughts associated with psychosis. ACT has a strong mindfulness component. A mindfulness of breathing exercise devised by Chadwick (2005) was incorporated into the treatment. All therapy sessions were recorded and competence and fidelity assessed by an expert in ACT (GM). All participants receiving the ACT intervention

were also free to receive whatever psychopharmacology, case management, and/or additional psychotherapy that the clinical team deemed necessary.

Procedure

The research procedures were approved by the West of Scotland NHS Research Ethics Committee No. 3 (ref: 09/S0701/74), and R & D approval (ref: PN09CP213) was granted from NHS Greater Glasgow and Clyde. The research team met with seven psychiatric services from across NHS Greater Glasgow and Clyde to present the research. Clinical vignettes were used to highlight how emotional dysfunction following psychosis might present. Referrals were invited to the study. A member of the research team then met with the individual to assess their appropriateness for the study. Informed consent was then sought. Once consented, participants completed assessment measures with a Research Assistant. Once baseline assessments had been completed participant details were passed to AG who undertook computerized randomization using a predetermined schedule of permuted blocks of random size. The research therapist then communicated the outcome of randomisation to each participant.

Participants met with a researcher (JMcT, LR, and DMcC) on a monthly basis to complete the self-report general outcome and therapy-specific measures. The assessors were all blind to treatment allocation. Two researchers (JMcT and LR) also completed all of the PANSS assessments. They both had extensive experience of using the PANSS in clinical and research settings. Inter-rater agreement was determined to be over 80%; consistent with recommendations for reliability (Kay, 1991; Norman et al., 1996). One participant missed appointments at 3 month follow-up to complete the therapy-specific measures. Their scores on these measures at 2 month post-baseline follow-up were used instead. Overall, blindness was breached on 9 occasions (n = 7 for the ACT arm; n = 2 for the TAU arm) during the trial. For all but two of these individuals, further follow-up assessments were completed by another researcher who remained blind to allocation.

RGW delivered all ACT sessions. Each session was approximately one hour in length. The WAI-SR was administered to participants in the ACT arm of the study following session 5 of the ACT intervention. It was posted out to participant's home address with a stamped addressed envelope for the form to be returned once completed. The letter accompanying the questionnaire was sent out by AG and was returned to him.

Following the completion of the trial JMcT reviewed the Personal Information Management System (PiMS). This is an electronic database used by NHS Greater Glasgow and Clyde to record contact between NHS Greater Glasgow and Clyde staff members and patients. The nature of these contacts (i.e. planned, crisis etc) is also recorded. We were specifically interested in determining the number of crisis contacts that participants had with mental health professional over the duration of the trial.

Statistical analyses

Likelihood ratio χ^2 analyses were used to test whether the frequency distribution of particular events were consistent across the sample. Kolmogorov-Smirnov analyses were conducted to determine if variables were normally distributed. Independent group t-tests were then used to compare between group differences between the TAU and ACT arms of the study at baseline for normally distributed variables. The nonparametric equivalent of an independent t-test (Mann-Whitney U) was used to assess differences between the TAU and ACT arms of the study at baseline variables that were not normally distributed. Independent group t-tests were used to compare between change scores (calculated by subtracting 3 month post-baseline scores from the baseline scores) for the TAU and ACT arms of the study at baseline for normally distributed variables. The nonparametric equivalent of an independent t-test (i.e. Mann-Whitney U tests) was used to compare between change scores for the TAU and ACT arms of the study for variables that were not normally distributed.

Spearman's ρ correlations (two-tailed) were used to test associations between change scores for the general outcome measures and the therapy-specific measures for the individuals in the ACT arm of the trial.

Results

Recruitment to the trial

Figure 1 provides information about the numbers of individuals referred to the trial and how this translated into the number of participants that were randomised into the trial. Over the 6 months of the trial recruitment period 43 referrals were received (7.2 referrals/month). A total of 35 individuals consented to participate (consent rate of 81.39%). A total of 27 participants were randomized into the study: 13 to treatment as usual (TAU) and 14 to ACT. Mean values for the participants randomised into the study were calculated for the general outcome measures used in the study PANSS Positive Syndrome Subscale (12.00 SD = 3.42), PANSS

Negative Syndrome Subscale (15.04. SD = 5.50), HADS Depression Subscale (8.15, SD = 4.36) and the HADS Anxiety Subscale (10.11, SD = 5.18).

INSERT FIGURE 1

Demographic details for participants are provided in Table 1. Likelihood ratio χ^2 analyses indicated that there were no significant differences between the TAU and ACT groups on these variables.

INSERT TABLE 1

Acceptability of the treatment

At 3 months post-baseline follow-up, 3 of the individuals randomised to TAU had withdrawn from the study compared to none of the participants randomised to the ACT intervention. This difference was significant (likelihood ratio χ^2 = 4.79, p < 0 .05). The individuals that withdrew from the study did not differ significantly from the individuals that did not withdraw on any of the measures. There were no suspected unexpected serious adverse reactions over the course of the trial.

All of the participants receiving the ACT intervention received 10 sessions of ACT. The median number of appointments offered to complete the 10 sessions was 11 (IQR = 10.00 – 13.25). The median number of DNAs was 1 (IQR = 0.00 – 2.00) and the median number of therapy sessions cancelled was 0 (IQR = 0.00 – 1.25). The ACT intervention took a median of 11.50 (IQR = 10.00 – 17.25) weeks to deliver.

The mean Working Alliance Inventory (short form; WAI-SF) ratings provided by participants for the Goal, Task and Bond sub-scales were 17.50 (SD = 2.12), 15.18 (SD = 2.89) and 17.20 (SD = 2.70) respectively. The maximum possible score on each of the WAI-SFR subscales was 20.

Comparisons of change in measures between the ACT and TAU groups

Table 2 provides details of the between-group comparisons of change scores between the TAU and ACT groups. There was no significant difference in the change scores for the PANSS Positive Syndrome subscale ($t = 0.24$, $df = 19$, $p > 0.05$). There was, however, a significant difference between the ACT and TAU groups for the change score of the PANSS Negative Syndrome subscale ($t = -2.36$, $df = 19$, $p < 0.05$). There was also a trend on the limit of significance for differences between the groups in the change scores on the Depression subscale of the HADS ($t = -2.09$, $df = 19$, $p = 0.051$). There was no significant difference between the groups on the Anxiety subscale of the HADS ($t = 0.12$, $df = 20$, $p > 0.05$).

In terms of differences in the change scores of the therapy specific measures, there was a significant difference for the KIMS Total score ($t = 2.66$, $df = 21$, $p < 0.05$). There were trends approaching significance regarding between group differences for the change scores for the KIMS Description ($t = 2.06$, $df = 21$, $p = 0.052$), and the KIMS accepting without judgement ($t = 1.99$, $df = 21$, $p = 0.059$) subscales. There was no significance difference between the two groups in the change scores for the AAQ-II ($t = 0.60$, $df = 21$, $p > 0.05$).

INSERT TABLE 2

Associations between change scores in general outcome and therapy specific measures

The change in Depression subscale of the HADS had significant correlations with the change scores for the: KIMS *Total* Score ($\rho = -0.66$, $p < 0\ .05$); *Describing* ($\rho = -0.70$, $p < 0\ .05$) and KIMS *Acting with awareness* ($\rho = -0.72$, $p < 0\ .01$) subscales. There was a trend approaching significance regarding the negative correlation between the change score for the Depression Subscale of the HADS and change in experiential avoidance as assessed by the change score of the AAQ-II ($\rho = -0.57$, $p = 0.051$). The change in scores from baseline to 3 month post baseline of the PANSS Negative subscale scores did not correlate significantly with any of the therapy-specific measures.

Crisis Contacts

The ACT arm of the study, relative to the TAU arm, had a significantly lower proportion of individuals who had crisis contacts over the duration of the trial (likelihood ratio $\chi^2 = 5.75$, p

= 0 .016). The ACT arm also had a significantly lower number of crisis contacts (Z = -2.24, p < 0.05).

Post-hoc analyses

Post-hoc analyses were conducted on the basis of whether participants met caseness on the HADS at baseline for depression and anxiety. The Bjelland et al. (2002) criteria of a score ≥ 8 on the Depression and Anxiety subscales of the HADS were used to ascertain respective caseness. Fourteen individuals met caseness for depression at entry into the trial (6 were subsequently randomised to TAU and 8 to ACT). A chi-square analysis, selecting only those individuals who were depressed at baseline, indicated that a significantly smaller proportion of individuals in the ACT arm of the study (N = 2) met caseness for depression at 3 month post-baseline follow-up relative to the TAU arm (N = 6) (Likelihood ratio χ^2 = 5.00, p < 0 .05). Eighteen individuals met caseness for anxiety at entry into the trial (9 were subsequently randomised to TAU and 9 to the ACT arm of the study). A chi-square analysis did not find any significant differences in the proportion of individuals meeting caseness for anxiety at 3 month post-baseline follow-up in the ACT arm of the study (N = 6) and the TAU arm (N = 7) (Likelihood ratio χ^2 = 1.01, p = 0 .314).

Discussion

This feasibility study of ACT for emotional dysfunction following psychosis is the first *blind-rated* randomised controlled trial of ACT for individuals with psychosis. The trial evidenced that referral pathways could be successfully established to identify individuals presenting with emotional dysfunction following psychosis. A very high proportion of these referrals consented to participate in the research. The mean HADS Depression and Anxiety subscale scores for the sample were above the established cut-off point for clinical caseness (i.e. ≥ 8). The mean HADS Depression subscale score for the sample corresponded to the 90th and 94th percentile ranks for Scottish females and males respectively (Crawford et al., 2001). Similarly, the mean Anxiety score for the sample corresponded to the 84th and 91st percentile rank for Scottish females and males respectively (Crawford et al., 2001). It seems therefore that the study succeeded in recruiting individuals experiencing elevated levels of emotional dysfunction.

All of the participants receiving the ACT intervention completed the treatment. The median number of DNA and cancelled appointments was low. The participants receiving ACT rated the extent to which they could work collaboratively with the therapist to identify goals for

therapy; work through tasks during therapy; and form a close bond with the therapist, very favourably. Over the course of the treatment none of the participants receiving ACT experienced any suspected unexpected serious adverse reactions. Consequently, it would appear that ACT as a treatment was highly acceptable to this group of individuals.

Measures were included in the current study to assess purported treatment targets of ACT i.e. experiential avoidance and mindfulness. Neither of the two previous studies investigating ACT for psychosis (Bach & Hayes, 2002; Gaudiano & Herbert, 2006) employed these measures. Relative to the TAU arm of the study, participants receiving ACT had a significantly greater change in mindfulness skills. Our findings add to previous research (Chadwick et al., 2009; Abba et al., 2008) showing that individuals with psychosis can tolerate mindfulness exercises and develop mindfulness skills over time. In the current trial, there was no significant difference between the two arms of in the degree of change in experiential avoidance across time. It could be that a longer period of follow up is required for significant differences in experiential avoidance to emerge. The AAQ-II (Bond et al., 2011) is a general measure of experiential avoidance and it may be that other measures need to be developed to assess specific forms of avoidance relevant to the experience of psychosis. This work has already begun with the development of the Voices Action and Acceptance Questionnaire (Shawyer et al., 2007) for assessing acceptance-based attitudes/actions in relation to auditory and command hallucinations.

A significantly greater proportion of people in the ACT arm of the study, relative to TAU, changed from being depressed at baseline to not being depressed at 3 month follow-up. There was also a trend approaching significance suggesting that the change in depression scores in the ACT arm of the study was greater than in the TAU arm. These results are consistent with those of Gaudiano and Herbert (2006) who found a marginally significant impact of ACT, relative to enhanced TAU, on mood as assessed by the BPRS affect subscore. In the ACT arm of the current study, a significant association was found between changes in depression and changes in mindfulness skills. To date methodologically rigorous research has failed to evidence the effectiveness of CBTp for treating depression in psychosis (Wykes et al., 2008). This is all the more concerning in light of Saarni et al.'s (2010) finding that depressive symptoms are the strongest predictors of poor quality of life in psychotic disorders. Previous research has shown that ACT can reduce levels of depression in non-psychotic populations (Zettle & Hayes, 1986; Petersen, 2007). The results of the current trial suggest that ACT offers promise as a potential treatment for depression in individuals with psychosis.

In the current study, there was no relative benefit of ACT, compared to TAU, for change in either anxiety scores or caseness over the course of the trial. As a treatment ACT aims to facilitate individuals to engage in behaviours that are consistent with their personal values (e.g. getting out and visiting friends or participating in a new activity etc.). It is possible that any benefit of ACT on anxiety levels in the short-term may be tempered somewhat by individuals endeavouring to make potentially anxiety-provoking changes to familiar behavioural routines. The follow-up period in the current research was comparatively short. Longer periods of follow-up may be required for the full effect of ACT on anxiety to become evident.

The lack of any significant differences in the current study between ACT and TAU at reducing positive symptoms is consistent with previous research (Bach & Hayes, 2002; Gaudiano & Herbert, 2006). Symptom reduction *per se* is not a primary goal of ACT. Instead, ACT aims to reduce *distress* associated with symptoms. In the current trial the number of crisis contacts over the course of the follow-up period was used as a general indicator of elevated levels of distress. The number of individuals making crisis contacts, and the median number of contacts that individuals made, was significantly smaller in the ACT arm of the study relative to the TAU arm. It is possible that this lower level of crisis contacts may actually be a consequence of the weekly contact participants in the ACT arm of the study had with the therapist during the trial. Future research could potentially control for therapist contact time and utilise longer-term follow-up to investigate whether individuals who receive ACT have lower levels of crisis contacts in the months following the cessation of the therapy.

Negative symptoms of psychosis (i.e. affective flattening, alogia, avolition, anhedonia and attentional deficits) account for much of the long-term morbidity and poor functional outcome of patients (Kurtz et al., 2005). Gaudiano & Herbert (2006) previously found no comparative benefit of ACT, relative to enhanced TAU, on negative symptoms. However, their research recruited psychiatric inpatients and employed a comparatively blunt measure of negative symptoms (i.e. BPRS Anergia). In the current study we found a significant difference between the two arms of the study in the degree of change in negative symptoms. Whereas there was a decrease in negative symptom levels in the ACT group, there was an increase in the TAU group. However, it is important to highlight that the level of negative symptoms of the participants recruited to the current trial was not particularly high. It remains to be seen if an ACT intervention would be effective at ameliorating negative symptoms in individuals with greater severity of these symptoms. Changes in the negative symptoms in the ACT arm of the study did not correlate significantly with changes in mindfulness or experiential avoidance. It may be that the emphasis that ACT places on facilitating people to explore what they value in

life and engage in value-consistent behaviour may help reduce negative symptoms. It is possible that the development of valid and reliable measures of value-consistent behaviour might help clarify how ACT interacts with negative symptoms. The Valued Living Questionnaire (Wilson et al., 2011) is a useful clinical tool for exploring value-consistent behaviour but the development of additional measures for research purposes could prove to be helpful.

The current study had several limitations. The numbers of participants recruited were small. In spite of the small numbers, large effect sizes were noted for associations between particular variables. The period of follow-up in the study was very short. We plan to address this in future trials. The absence of a diagnostic interview to confirm case-file diagnoses is also a weakness. The participants that were recruited to the trial had a range of psychiatric diagnoses. It could be argued that the pragmatic nature of recruitment lends ecological validity to the research. There is substantial overlap in the types of problems individuals with different psychotic disorders experience (BPS, 2000). However, it has previously been suggested that there are qualitative differences in the psychotic symptoms experienced by individuals diagnosed with *affective* compared to *psychotic* disorders (Winokur et al., 1985). Consequently, there is a small risk that the results of the current trial may have been biased by the inclusion of two participants with affective disorder diagnoses. Future research could address this issue by employing less heterogeneous samples of individuals with psychosis. The ethnicity of the sample recruited to the current study was heavily skewed toward Caucasian. Future research should seek to recruit more ethnically diverse populations. A final drawback relates to the clinical stability of the sample. The current study was interested in recruiting individuals experiencing emotional dysfunction *following* psychosis, rather than individuals who were acutely unwell with psychosis. However, using a score of 5 or above on any item of the PANSS Positive Syndrome subscale to identify acutely unwell individuals has limitations. It is possible for individuals to score highly on items of the PANSS Positive Syndrome subscale and still not be ‘acutely unwell’. An alternative approach would have been to recruit individuals on the basis of clinical stability (e.g. no major exacerbation in symptoms in the previous 6 months) rather than basing recruitment on scores on the PANSS Positive Syndrome subscale scores.

Conclusions

As a feasibility study the current trial successfully evidenced that individuals could be recruited to a trial of ACT aimed at addressing emotional dysfunction following psychosis; that ACT was an acceptable intervention for this population and that a control group could be

recruited to the trial. Significant changes were noted on general outcome and therapy-specific measures. It seems that ACT offers some promise in potentially ameliorating depression and negative symptoms experienced by individuals who have experienced psychotic disorders. We believe that the results of the current trial support the merit and feasibility of conducting a larger trial of ACT for emotional dysfunction following psychosis. Such a trial may benefit from screening participants into the trial on the basis of caseness for a particular form of emotional dysfunction (i.e. depression).

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Emotional dysfunction (depression and anxiety) following the experience of psychosis. > Acceptance and Commitment Therapy (ACT) for post-psychotic emotional dysfunction. > Individuals randomised to receive ACT found the intervention acceptable.> ACT significantly improves depression caseness and negative symptoms compared to TAU. > Changes in mindfulness correlated with changes in depression in the ACT group.

Table 1. Demographic information about participants

		Participants randomised to ACT (N = 14)	Participants randomised to TAU (N = 13)
Gender			
	Male	10 (71.40%)	11 (84.60%)
	Female	4 (28.60%)	2 (15.4%)
Mean Age (std)		33.57 (8.63)	34.54 (10.97)
Marital status			
	Single	13 (92.90%)	10 (76.90%)
	In a relationship	0 (0.00%)	2 (15.4%)
	Married	1 (7.1%)	0 (0.00%)
	Divorced	0 (0.00%)	0 (0.00%)
	Separated	0 (0.00%)	1 (7.70%)
Education			
	Left school < 16 yrs	5 (35.70%)	3 (23.10%)
	Left school at 16 yrs	4 (28.60%)	4 (30.80%)
	Left school at 17/18 yrs	2 (14.30%)	3 (23.10%)
	Completed/completing college course	3 (21.40%)	0 (0.00%)
	Completed university degree course	0 (0.00%)	1 (7.70%)
Employment status			
	Full-time paid	0 (0.00%)	1 (7.70%)
	Part-time paid	0 (0.00%)	1 (7.70%)
	Student	1 (7.10%)	0 (0.00%)
	Unemployed (benefits)	12 (85.70%)	9 (69.00%)
	Unemployed (no benefits)	1 (7.10%)	2 (15.40%)
Ethnicity			
	White British	14 (100.00%)	12 (92.30%)
	White Other	0 (0.00%)	0 (0.00%)
	Pakistani	0 (0.00%)	0 (0.00%)
	African	0 (0.00%)	0 (0.00%)
	Other	0 (0.00%)	1 (7.70%)
	Not provided	0 (0.00%)	0 (0.00%)
Diagnosis			
	Schizophrenia (F20)	7 (50.00%)	6 (46.20%)
	Unspecified Non-organic Psychosis (F29)	4 (28.60%)	3 (23.10%)
	Schizo-affective Disorder Manic Type (F25.0)	0 (0.00%)	1 (7.70%)
	Schizo-affective Disorder Not Specified (F25.9)	1 (7.70%)	1 (7.70%)
	Bipolar Disorder Mania and psychosis (F31.2)	1 (7.10%)	0 (0.00%)
	Bipolar Disorder depression and psychosis (F31.5)	1 (7.00%)	1 (7.70%)

Table 2 Means (SD) on the measures for the ACT and TAU participants at baseline and 3 month follow-up

	Baseline		3 Months Post-baseline		Change: baseline – 3 months		Between Group Differences in Change Scores				
	ACT	TAU	ACT	TAU	ACT	TAU	ACT - TAU	t-test / Mann Whitney	df	p	Effect Size
General Outcome Measures											
Positive syndrome subscale PANSS	11.36 (2.62)	12.75 (4.16)	9.75 (3.60)	11.70 (4.72)	0.92 (3.99)	1.33 (3.71)	-0.41	t = 0.24	19	0.810	0.05
Negative syndrome subscale PANSS	16.29 (4.87)	13.58 (6.02)	12.25 (5.03)	14.30 (4.67)	3.50 (3.78)	-0.89 (4.76)	4.39	t = -2.36	19	0.029*	0.47
HADS Depression	8.62 (4.84)	7.92 (4.07)	4.00 (3.06)	6.22 (3.73)	4.62 (4.33)	1.63 (2.20)	2.99	t = -2.09	19	0.051	0.43
HADS Anxiety	8.57 (4.77)	11.77 (5.28)	6.08 (3.71)	10.70 (4.62)	2.69 (4.07)	2.88 (3.06)	-0.19	t = 0.12	20	0.904	0.03
Therapy Specific Measures											
KIMS Observation	33.08 (8.89)	31.62 (10.70)	38.31 (6.98)	34.90 (8.91)	-5.23 (6.13)	-2.00 (6.67)	-3.23	t = 1.21	21	0.241	0.26
KIMS Description	24.15 (6.48)	26.00 (6.10)	29.54 (5.65)	24.80 (7.39)	-5.38 (6.27)	0.90 (8.39)	-6.28	t = 2.06	21	0.052	0.41
KIMS Awareness	28.92 (7.48)	30.54 (8.71)	30.77 (5.02)	28.50 (6.88)	-1.85 (4.49)	1.30 (6.85)	-3.15	t = 1.33	21	0.198	0.28
KIMS Acceptance without judgement	25.46 (8.72)	28.77 (9.40)	29.15 (4.47)	25.10 (11.12)	-3.69 (8.96)	3.70 (8.62)	-6.69	t = 1.99	21	0.059	0.40
KIMS total	111.61 (10.16)	116.92 (16.71)	127.77 (8.63)	113.30 (20.27)	-16.15 (3.90)	3.90 (22.37)	-20.05	t = 2.66	21	0.015*	0.50
AAQ-II	40.15 (11.04)	39.23 (15.35)	47.77 (11.39)	42.10 (15.49)	-7.62 (13.53)	-4.20 (13.67)	-3.42	t = 0.60	21	0.557	0.13

* $p < 0.05$

PANSS = Positive And Negative Syndrome Scale; HADS = Hospital Anxiety and Depression Scale; KIMS = Kentucky Inventory of Mindfulness Skills; AAQ-II = Acceptance and Action Questionnaire

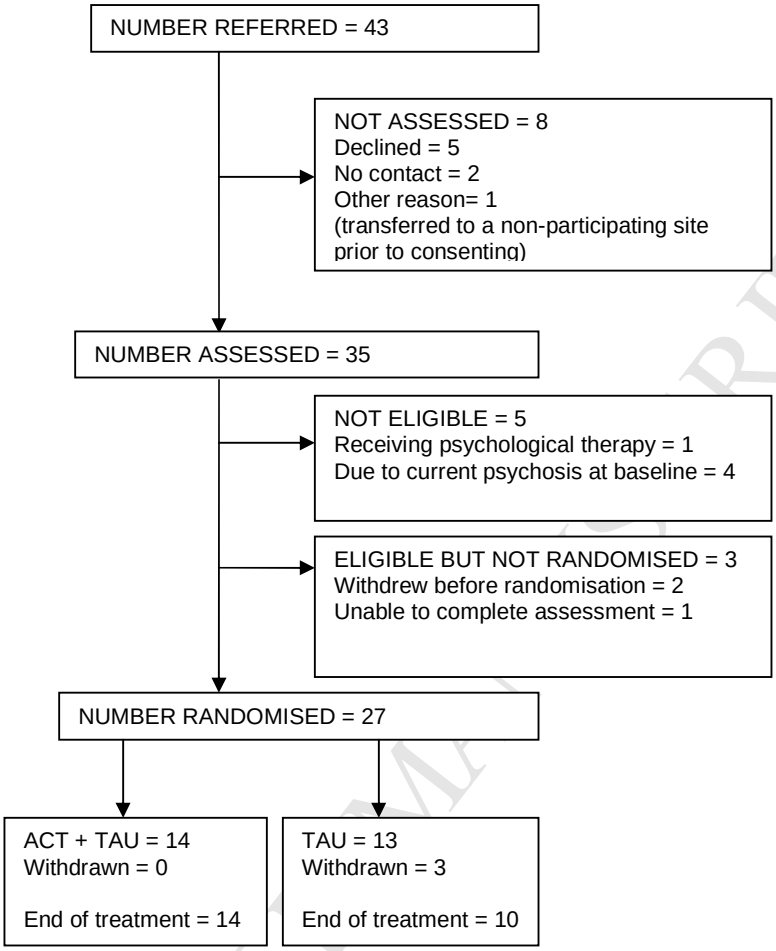

Figure 1. CONSORT diagram of participants through the trial